

University of Illinois Department of Agricultural and Biological Engineering
 Bioenvironmental and Structural Systems Lab
 Final Report

Project Number: 11211
 Test Date: June 28, 2011

Fan:		Motor:		Shutter:
Make- <i>Schaefer</i>		Make- <i>Marathon</i>		Material- <i>aluminum</i>
Model- <i>573CF112G-1-HV-M</i>		Model- <i>5KCR48WN0920T</i>		# Doors- <i>15 per column</i>
Blade dia.- <i>57.3"</i>		Hp- <i>1.5</i>		# Columns- <i>2</i>
Orifice dia.- <i>57.8"</i>		RPM- <i>1725</i>		Door length <i>29.7"</i>
		Volts- <i>208-230</i>		Location- <i>intake</i>
		Amps- <i>6.7-6.2</i>		
Blade:		Hz- <i>60</i>		Guards:
Number- <i>3</i>		Phase- <i>1</i>		Description- <i>wire</i>
Shape- <i>propeller</i>		S. F.- <i>1.2</i>		Spacing- <i>1.5" concentric</i>
Material- <i>galvanized steel</i>				Location- <i>exhaust</i>
Pitch- <i>-</i>				
Clearance- <i>0.3"</i>		Housing:		Discharge Cone:
		Material- <i>fiberglass</i>		Depth- <i>39"</i>
Drive Sheaves:		Intake area- <i>58.6"x 59"</i>		Minor dia.- <i>57.8"</i>
Drive dia.- <i>2.6" o.d.</i>		Discharge- <i>57.8" o.d.</i>		Major dia.- <i>67"</i>
Axle dia.- <i>8.3" o.d.</i>		Depth- <i>28" top</i>		
		<i>26.8" bottom</i>		

Notes: 0

Test Conditions:
 T(wb): 64 Barometric pressure, recorded 29.39
 T(db): 78 Barometric Pressure, corrected 29.26

							SI Units		
Static Pressure	Airflow						Static Pressure	Airflow	
(in.H2O)	(cfm)	rpm	Volts	Amps	Watts	cfm/Watt	(Pa)	(m ³ /hr.)	(m ³ /hr)/W
0.00	31200	522	230.2	5.80	1304	23.9	0	52900	40.6
0.05	29200	521	229.8	6.00	1352	21.6	12	49600	36.7
0.10	27000	520	230.4	6.16	1391	19.4	25	45800	32.9
0.15	24500	520	230.5	6.29	1420	17.2	37	41600	29.3
0.20	21200	520	230.2	6.38	1446	14.7	50	36100	25
0.25	13600	519	230.1	6.37	1439	9.5	62	23200	16.1
0.30	7700	518	231.1	6.69	1524	5.0	75	13000	8.6